Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of:	)	
	)	
Technical Advisory Committee (TAC)	)	ET Docket No. 13-101
White Paper and Recommendations	)	
for Improving Receiver Performance	)	

To the Commission:

REPLY COMMENTS OF JAMES EDWIN WHEDBEE

COMES NOW the undersigned, JAMES EDWIN WHEDBEE, who pursuant to the Commission's invitation in the above-captioned proceeding and Sections 1.415 and 1.419 of the Commission's rules and regulations [*47 C.F.R. §§ 1.415, 1.419*] replies to the comments filed in these proceedings, and where general consensus lies, pursuant to Section 1.41 of the Commission's rules and regulations [*47 C.F.R. §1.41*] informally requests the Commission act upon these reply comments as prayed for hereinbelow. For his reply comments, the undersigned states as follows.

SCOPE OF THESE REPLY COMMENTS

1. These reply comments generally respond to and address the timely-filed comments by the following organizations ("these parties"): Aeronautical Frequency Committee ("AFC"); American Radio Relay League, Incorporated ("ARRL"); Consumer Electronics Association ("CEA"); CTIA-The Wireless Association ® ("CTIA"); Genesys Limited ("Genesys"); GPS Innovation Alliance ("GPS"); Motorola Mobility, LLC ("Motorola, llc"); Motorola Solutions, Inc. ("Motorola, Inc."); National Association of Broadcasters ("NAB"); Rockwell Collins, Inc. ("Rockwell"); and, the Wireless Innovation Forum ("WIF").

2. To a lesser extent, because the undersigned already filed reply comments to their comments, these reply comments may refer to individuals and organizations whose comments were filed before

July 22, 2013 where context and harmony with the issue require.

OVERLOOKED ASSUMPTIONS

3. For the most part, the parties ignore the Commission's long-overlooked informal practice of ignoring interference complaints which do not meet the subjective harm-claim thresholds ("HCT") of Commission policymakers, depending on the perceived importance of the source of interference and the perceived lack of importance of those reporting interference and seeking enforcement action by the Commission. The Commission's record in the Access BPL proceedings are replete with examples of the Commission overlooking harmful interference to the licensed operations of the amateur radio service in favor of unlicensed BPL operations. The T.A.C. White Paper telegraphs to the world what some radio services already fully know and understand: in the exercise of its prosecutorial discretion, the Commission is already prepared to abandon its obligations of enforcement against interference when the radio service receiving harmful interference is out of favor or gets in the way of what the Commission perceives as "progress."

4. International Telecommunications Union (ITU) radio rules and regulations already establish a baseline for HCTs: (a) internationally exclusive allocations are entitled to complete (100%) protection from interference from any and all sources, whether defined by the Commission as "harmful" or not, except other licensees within the allocated service, in which case, time in service determines priority; (b) internationally primary allocations are entitled to complete (100%) protection from interference from any and all secondary sources, whether defined by the Commission as "harmful" or not; and, (c) licensed users are entitled to complete (100%) protection from interference from any and all radiators operating on a permitted (but unallocated) basis. Given the Supremacy Clause of the Constitution of the United States of America gives international treaties status as law-of-the-land, these minimum protections required under ITU radio rules and regulations must be enforced.

5. Market forces have already established the cost consumers are willing to bear for receivers. With the DTV Transition, the government bore part of the cost of digital-to-analog conversion receivers for consumer television sets and, to a lesser extent certain transmission facilities, thereby subsidizing the conversion to a new receiver regime. The T.A.C. White Paper suggests a conversion to receivers based on HCT's, but because consumers have already determined the prices the market will bear for receivers, unless the government is planning to subsidize those changes, the market will not bear those costs except in the very long run (decades).

STATUTORY AUTHORITY TO REGULATE RECEIVERS

6. The 'elephant in the room' with most of the commenting parties seemed to be whether or not the Federal Communications Commission ("Commission" herein) has statutory authority to regulate radio receivers. Reference to Section 3(b) of the Communications Act of 1934, as amended [*now embodied in 47 U.S.C. §151(40)*], should dispense with any doubt the Commission may regulate radio receivers, wherein it states: "(b) "Radio communication" or "communication by radio" means the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications) incidental to such transmission." The phrase, "among other things, the receipt...of communications" is decisive here, because the words which follow: "...incidental to such transmissions" is operative as to this proceeding. Within the meaning of Section 154(i) [*47 U.S.C. §154(i)*], the Commission may regulate receivers, either directly (command-and-control model), or indirectly (market-based models, including voluntary/incentive-based models).

7. Section 302a(a)(2) of the Communications Act of 1934, as amended [*47 U.S.C. § 302a(a)(2)*] clearly authorizes the Commission to adopt regulations "...establishing minimum performance standards for home electronic equipment and systems to reduce their susceptibility to interference from

radio frequency energy. Such regulations shall be applicable to the manufacture, import, sale, offer for sale, or shipment of such devices and home electronic equipment and systems, and to the use of such devices."

8. Section 303(f) of the Communications Act of 1934, as amended [*47 U.S.C. § 303(f)*] clearly authorizes the Commission to adopt regulations which "prevent interference."

9. Given the foregoing, statutory predicate for the Commission to regulate receivers clearly exists and, given the equipment authorization process described in Part Two of the Commission's rules and regulations [*47 C.F.R. Part 2*], could readily be implemented.

ANALYSIS OF COMMENTS

10. Given the unspoken assumptions and statutory authority of the Commission to adopt receiver regulations, I undertook an analysis of the parties' comments in order to respond herein to those. This analysis examined common themes and ideas. The result of that analysis is depicted below...

Issues Addressed within Comments Filed by Page Number

↓ Issue/Commenter →	AFC	ARRL	CEA	CTIA	Genesys	GPS	Motorola, llc	Motorola, Inc.	NAB	Rockwell	WIF
Higher cost to manufacture.	2	17	8	4	3, 5—7	6—7, 9	**	**	**	1—2, 4—5	**
Allocation overlay concerns.	7	3, 16, 19--20	11	5	10, 12	4—6, 11, 14	1--5	3--4	6	**	11—12
Establishing harm claim thresholds (HCT).	4--7	2	1--4,	8--9	7--10	2—4, 7	**	2--3	4--7	3—4	7—8,10—14
Using different emission types.	5	17	**	**	**	14, 16	**	**	6--7	**	**
Components of system/antenna.	**	17--18	**	**	11—14, 19--20	8—10	**	4	**	**	**
Radio services not subject to HCT.	**	3, 15, 21--24	**	**	**	13, 17-20	1--5	3--4	**	1--2	**
Incentives vs. Command-and-control approach to impose.	**	2—3, 15	4--6	4--6	8, 18—19	21-22	**	1	1--4	1--2	6—7
Receiver standards; statutory authority to impose.	**	12-14,	4, 7, 9	6	11	3	**	1	**	**	**
Multi-stakeholder organizations...	7--9	19	11*	7--8	14—16	3—4	**	1—2, 4	3--4	5--7	2—4, 16—20
FCC's role...	8--9	14, 19	4, 8-10	6	8—9, 16--19	3-4, 12--13	1--5	1, 4--5	5	**	20—21
Exclusivity of Allocations-Enhanced Value of...	**	**	**	3	**	**	**	**	**	**	**
Expressed Opposition to White Paper for their Service?	Yes	Yes	No	No	No	Yes	Yes-Generally	No	No	Yes-General	No

NOTES: * Suggests 'industry' be the source of regulation. Industry can be impacted as much by not having an allocation as having one; therefore, industry-premised regulation overlooks nonprofit users, public safety, etc., which aren't market-based. ** Issue does not appear to be a significant source of commentary.

11. Considering there was an even split in support versus opposition to the T.A.C. White Paper, I would note the comparative silence in these proceedings. To have a mere dozen commenters in conjunction with this split amongst the parties commenting suggests there is little support for the T.A.C. White Paper.

12. All but one of the parties filing comments touched upon how the Commission allocates radio services within the spectrum. With one exception, the parties believe the Commission would have a role in the implementation and enforcement of the outcomes of the T.A.C. White Paper. Notably, all but one of the parties suggested the importance of having multi-stakeholder organizations ("MSOs") involved; however, amongst the comments, it was clear that the parties have already staked out positions on the composition of those MSOs. Most parties prefer not to have the Commission impose receiver regulations. Finally, most of the parties believe that HCTs may be adopted, and while the recommendations for HCTs were variable, a common principal emerged: Section 15.209 of the Commission's rules and regulations [*47 C.F.R. § 15.209*] cannot be used to establish HCTs. Many of the parties recognized that the Commission should, and probably would be wise to, consider antennas and other variables in communications (power, emissions, etc.) as part of the establishment of HCTs. One of the parties even acknowledged the value of exclusivity in spectrum allocations.

13. A consensus clearly reflects that radio services involved in the protection of life, health, and property must be protected if the T.A.C. White Paper is implemented. The same degree of consensus seems to suggest that Part 15 devices are entitled to zero protection (an 'infinite' HCT). A consensus seems to be developing that uncoupled receivers cannot currently be regulated in the manner suggested by the T.A.C. White Paper. If silence taken together with the comments of the parties is any indication, a consensus already exists for the Commission to tread lightly into this aspect of spectrum regulation. The parties have already indicated that they consider direct regulation treacherous ground, so the question of market-based regulations remains.

14. Genesys points out in its comments that the receiver market is already saturated. For the sake of these reply comments, assuming that is true, the price of receivers the market will bear is the current price of receivers. Given so many of the parties commented that there will be an increased cost in receivers should the T.A.C. White Paper be implemented, it is unlikely in a saturated market that consumers will consider purchasing receivers just because the Commission may or may not enforce interference complaints which may or may not happen into the future.

CONCLUSIONS

15. The Commission already has opted not to investigate and take enforcement action against meritorious claims of interference based on subjectively-determined worths between an incumbent license spectrum user and a prospective unlicensed spectrum user. That is de facto HCT regulation, so to have it made de jure is a bit of a moot point. ITU radio rules and regulations already establish which radio services within a particular segment/band of the spectrum shall receive protection from interference. What remains is to define what is “harmful” about this or that level of interference. The parties' comments point out two (2) factors: that industry insiders should have some role to play, but, equally-equipped industry insiders in the LightSquared vs. GPS case couldn't resolve their differences. This means the status quo must remain: the Commission is the arbiter of interference complaints. What is “harmful” is probably going to require a statute to establish, at least as far as RF interference is concerned.

16. The T.A.C. White Paper overlooked other components within the telecommunications system from which greater benefits than costs may be realized: the antenna. If one understands the T.A.C. White Paper within the context of increasing available spectrum for broadband deployment, antenna regulation makes the most sense because it reduces the need for high power transmitters. Any receiver equipped with an excellent antenna will be far more sensitive than one equipped with a poor antenna.

This has been overlooked by the cellular telephone industry, the wireless broadband industry, and the broadcast industry, so many (if not all, to some point or another) of the licensed and unlicensed users of the electromagnetic spectrum have been poor custodians of their spectrum by employing inefficient antennas. That must first change before serious thought can be given about imposing new costs on consumers with receiver upgrades.

Because of improved receiver antennas, lowering the power outputs of transmitters will have the concomitant benefit of reducing spurious emissions, allowing a greater number of users within a particular spectrum segment/band, thus enhancing competition and lowering consumer costs. Within this model, the lowered costs for consumers provides the predicate for later adopting receiver regulations which adopt HCTs as the increasing receiver costs are effectively offset. The 'unintended consequences,' and I'd argue, benefit of this approach is also the lower level of RF emissions near the cell-tower site, thus embracing the Commission's interests as expressed recently in Dockets ET 13-84 and ET 03-137.

WHEREFORE, the undersigned respectfully recommends the Commission continue discussing the goals and objectives of the T.A.C. White Paper while first implementing regulations requiring better antenna design on the receiving end of all communications, and establishing within each communications service (licensed or not) receiver antenna standards which, if adopted, give the operators thereof the same benefits as if they had met the harm-claim thresholds contemplated in the T.A.C. White Paper, and for such other and further relief as shall be consistent herewith.

Respectfully submitted:

July 24, 2013

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